

## CLAIMS

1. A holographic photonic integrated circuit, comprising:
  - a substrate formed with a ridge plane;
  - a waveguide formed in said ridge plane having an input and an output;
  - 5 a hologram formed in said ridge plane at least partially through said waveguide; and
  - a CW light source wherein an optical signal entering said input is modulated by said CW light source to create a modulated output signal.